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DRAFT

9 May 52

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PROJECT - APPRAISAL OF USSR RESEARCH AND DEVELOPMENT CAPABILITIES

(Tab 23)

Characterization of Problem

The idea of effective research and development for national economy is an appropriate balance between purely fundamental and industrial research. It is probable that no information has arrived at the ideal balance, but in a large number of cases in the Western countries, reasonable balance has been attained through the free exchange of scientific and technical literature.

From our general knowledge of research and development in Russia, we have the impression that the pre-revolution research effort in Russia was confined almost exclusively to fundamental research and that the scientific training in that country during this period has not qualified them for the translation of their results toward industrial applications.

With the introduction of the Marxist ideas into the Soviet organization this situation is completely reversed. In other words, they are going from one extreme to the other.

Such a change-over in scientific teaching and concept would require a complete change of attitude on the part of the teachers of science.

105. (1) The present capabilities of USSR research and development are dependent upon the success which the Government has had, within the time between the revolution and the present, to develop not only capable instructors but also the number of capable men that these have been able to train to carry out the large amount of research and development which has been necessary to expand their chemical industry. In general, this research and development necessary to expand their chemical industry is not original research but is more of the nature of becoming familiar with the literature of the Western countries and working out details for copying processes and uses for chemicals which are well known in the Western countries. Their capabilities for carrying out original research

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and development will, therefore, be limited, ~~and the~~ quality and number of capable scientists who are not occupied in this copying type of research ~~is questionable~~.

Preliminary List of Information Available, which would contribute toward appraisal.

WS. (2) a. Study of the published literature and discussions with individuals familiar with research in Russia before the revolution will provide authoritative information on the character of pre-revolutionary research, ~~in Russia~~. Items contributing would be the influence of Western research through training of Russian scientists, general aspects of social and economic conditions of scientists in Russia, the relation of Russian scientists to Russian industry as it existed then, ~~etc.~~ and the like.

Research and Development under the Soviets

In general, this would involve the study of the evolution from the pre-revolutionary character of research to the Marxist concept of research and development. Items which will assist in the evaluation could be:

- INS (3)
- a. References to Propaganda designed to convert scientists to the Marxist principle, including consideration of the major personalities responsible, *and their successes and failures in these efforts.*
 - b. References to items indicating success in conversion.
 - c. References to items indicating failure in conversion.
 - d. References to items referring to Capacity, equipment, and facilities for training *scientific personnel;*
 - e. References to items referring to *the* quality of training, including the character of instructors and the numbers in various categories, such as technicians, undergraduate, and graduate, *etc.*

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- Principal*
- ~~c.~~ References to items referring to *Principal* centers of training.
 - ~~d.~~ ~~g.~~ References to items in the published scientific literature on the *Originality* of research work and ideas.
 - ~~e.~~ ~~h.~~ References to items of *Organization for research and development*.
 - ~~f.~~ ~~i.~~ References to items concerning locations specializing in specific research fields. *Institution for specialized research.*
 - ~~g.~~ ~~j.~~ References to items referring to ~~relations~~ of scientific organizations with specific industries.
 - ~~h.~~ ~~k.~~ References to items indicating ~~Methods~~ for translating research results to commercial application.
 - 1. References to items of opinions of pros and cons as compared with Western operations.
 - m. References to items of opinion of Western scientists and technicians having contact with USSR counterparts on their capabilities and limitations.